AN ARCHAEOLOGICAL SURVEY FOR THE WALLACE PACK UNIT WASTEWATER TREATMENT PLANT PROJECT IN GRIMES COUNTY TEXAS

Antiquities Permit 3570

By
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Project Number 04-32

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ABSTRACT

Brazos Valley Research Associates (BVRA) conducted archaeological survey and monitoring at the Wallace Pack Unit, Grimes County, Texas in October 2004 under Antiquities Permit 3570. This investigation examined the site of a proposed lift station and 4498 feet of water and sewer lines within a 10 acre tract on property owned and managed by the Texas Department of Criminal Justice (TDCJ). The entire project area is in clay soils with no sandy topsoil. Therefore, the methods employed by the field survey crew were designed to look for prehistoric sites buried in the Brazos River flood plain. The site of the proposed lift station had already been subjected to excavation and partial construction, making examination of the undisturbed surface impossible in this area. No evidence of a buried prehistoric site was found in any portion of the project area, and no artifacts were collected.

ACKNOWLEDGMENTS

I am grateful to the following individuals for their support during this project. At the TDCJ, assistance was provided by Mark Laughlin, Warden of the Pack Unit; Lonnie Townsend, Maintenance Superintendent; Danny Dempsey, Project Administrator; Martin K. Smith, Facilities Division; Dennis Raymond, PE.; and Tom McMickle, Environmental Manager. John P. Lee, P.E. of HBC Terracon, was the Quality Assurance Contract Project Manager for this project. The Project Superintendent for Bryan Construction Company, the firm responsible for the proposed construction, was Joe Goodson. Edward P. Baxter was the Project Archaeologist and is responsible for preparing the figures that appear in this report. Mr. Goodson and Jerry Smith, also of Bryan Construction Company, accompanied him in the field. William A. Martin of the Texas Historical Commission (THC), Archeology Division was the project reviewer. The records at the Texas Archeological Research Laboratory (TARL) on the campus of The University of Texas at Austin were checked by Allegra Azulay for the presence of previously recorded sites in the project area and vicinity.

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INTRODUCTION

The TDCJ proposes to construct a wastewater treatment plant, lift station, and associated water and sewer lines on the Wallace Pack Unit in southern Grimes County, Texas (Figure 1). The Major Work Request number for this project is 02697004, and the Texas Pollution Discharge Elimination System (TPDES) permit number is 13743-001. Topographic coverage is provided by the USGS 7.5' quadrangle, Courtney, Texas (3096-141) (Figure 2).

The wastewater treatment plant will be approximately 50 x 66 feet in size and 11 feet in depth. It will be constructed on top of 12 foot of fill. Informants stated that this fill was taken from an area just to the south of the project area prior to this project. It is believed that the lake shown in Figure 3 represents the site where the fill was taken. The proposed construction will not affect the original ground surface due to the height of the artificial surface created by the fill. The lift station will be 14 x 16 feet in aerial extent and between 15 and 18 feet in depth. The depth of the 4498 feet of water and sewer lines will vary between 0 and 14 feet, and they will be placed in a two-foot wide trench. The project area is depicted in Figure 3 that is based on an engineering map provided by Bryan Construction Company.

Significant archaeological sites have been recorded in this part of Texas, and one prehistoric site (41GM404) is located approximately .625 miles to the northeast of the proposed construction site. The project area is located in clay soils in the Brazos River flood plain. Since buried sites in similar settings have been found in nearby areas, an archaeological survey was requested by the Texas Historical Commission (THC) in a letter dated March 21, 2004. In order to satisfy this legal obligation, the TDCJ, through HBC Terracon, retained BVRA to perform this service. Antiquities Permit 3570 was awarded to BVRA for this project.

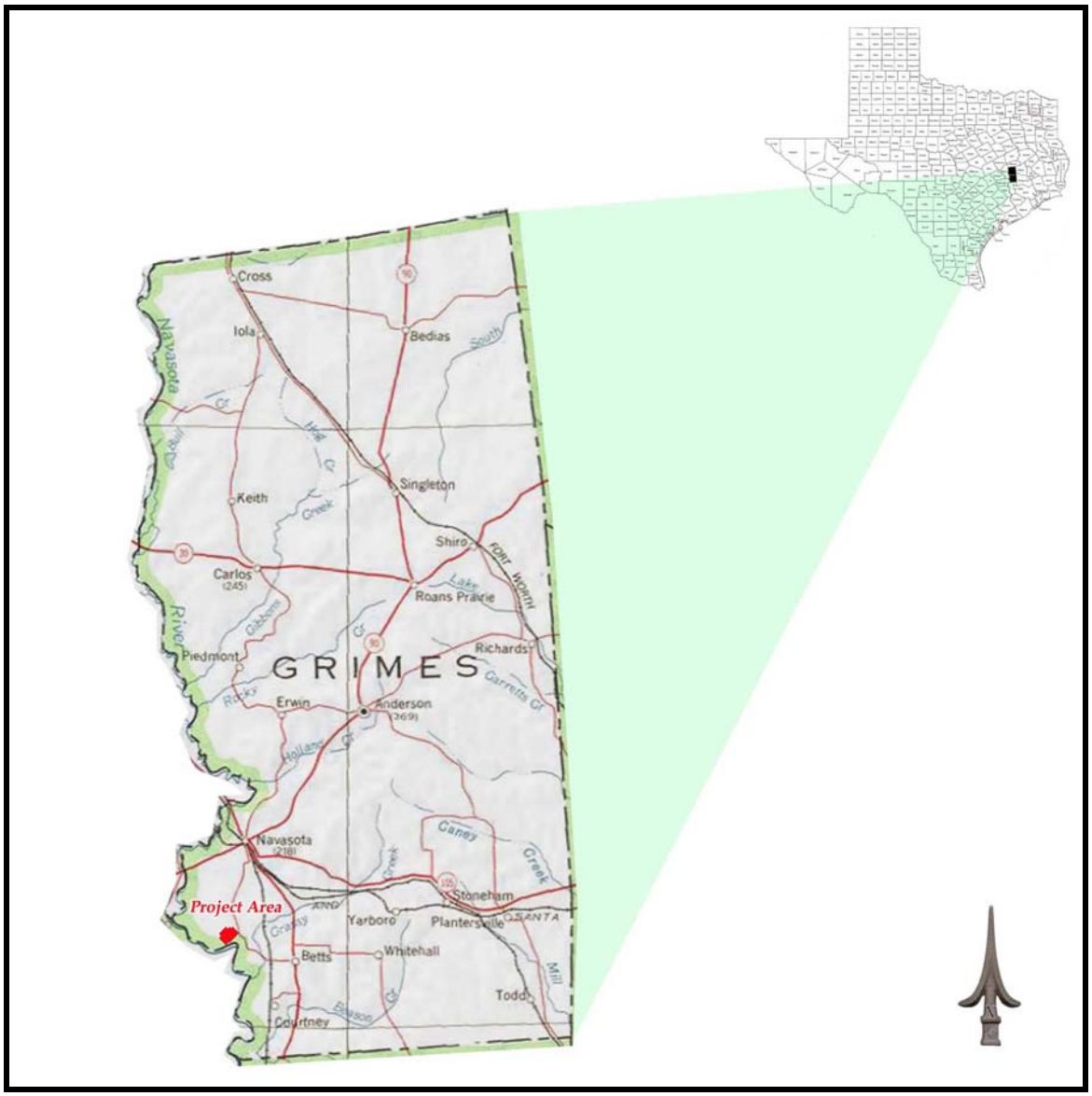

Figure 1. General Location

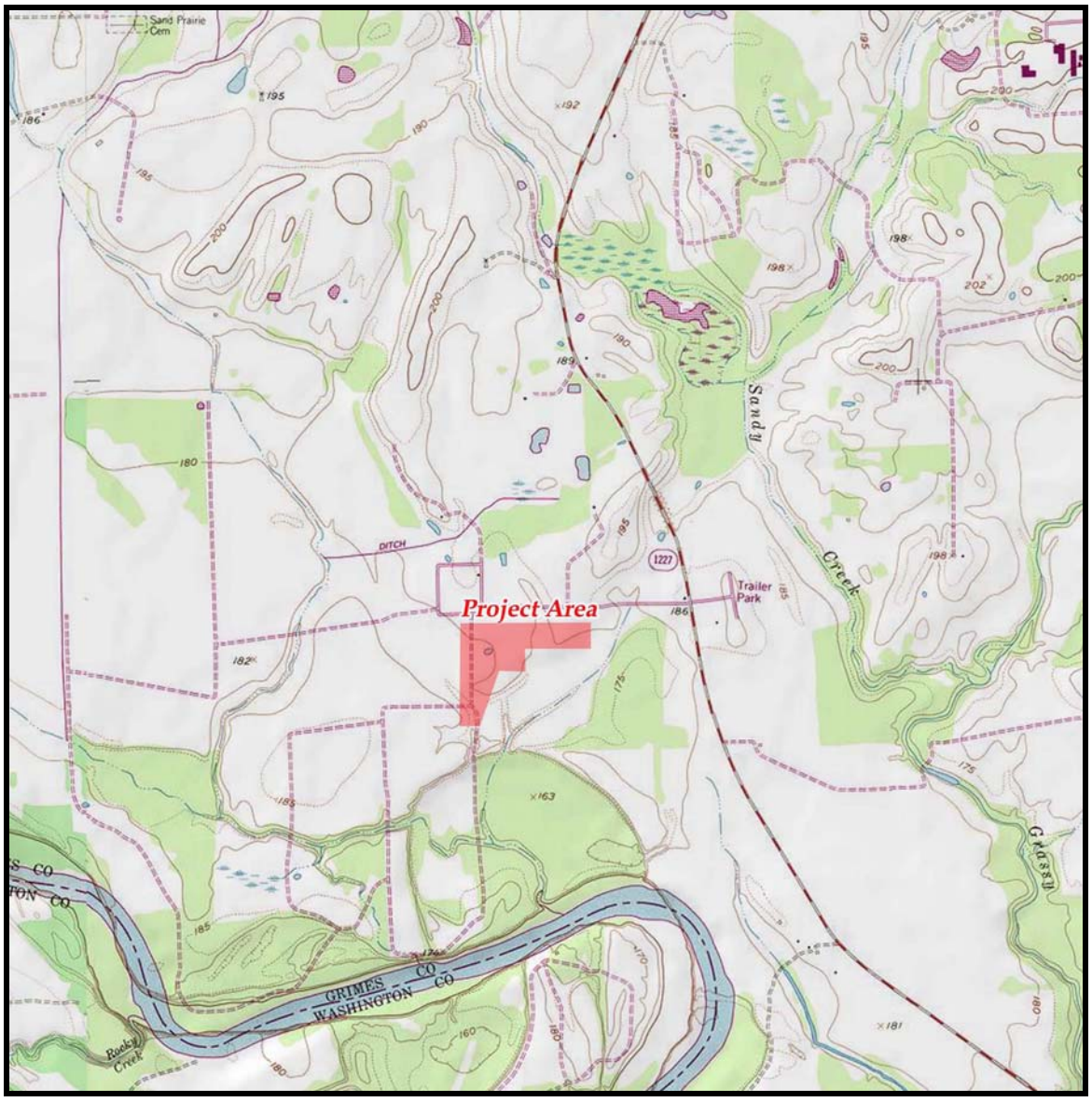

Figure 2. Project Area on Topographic Quadrangle Courtney, TX

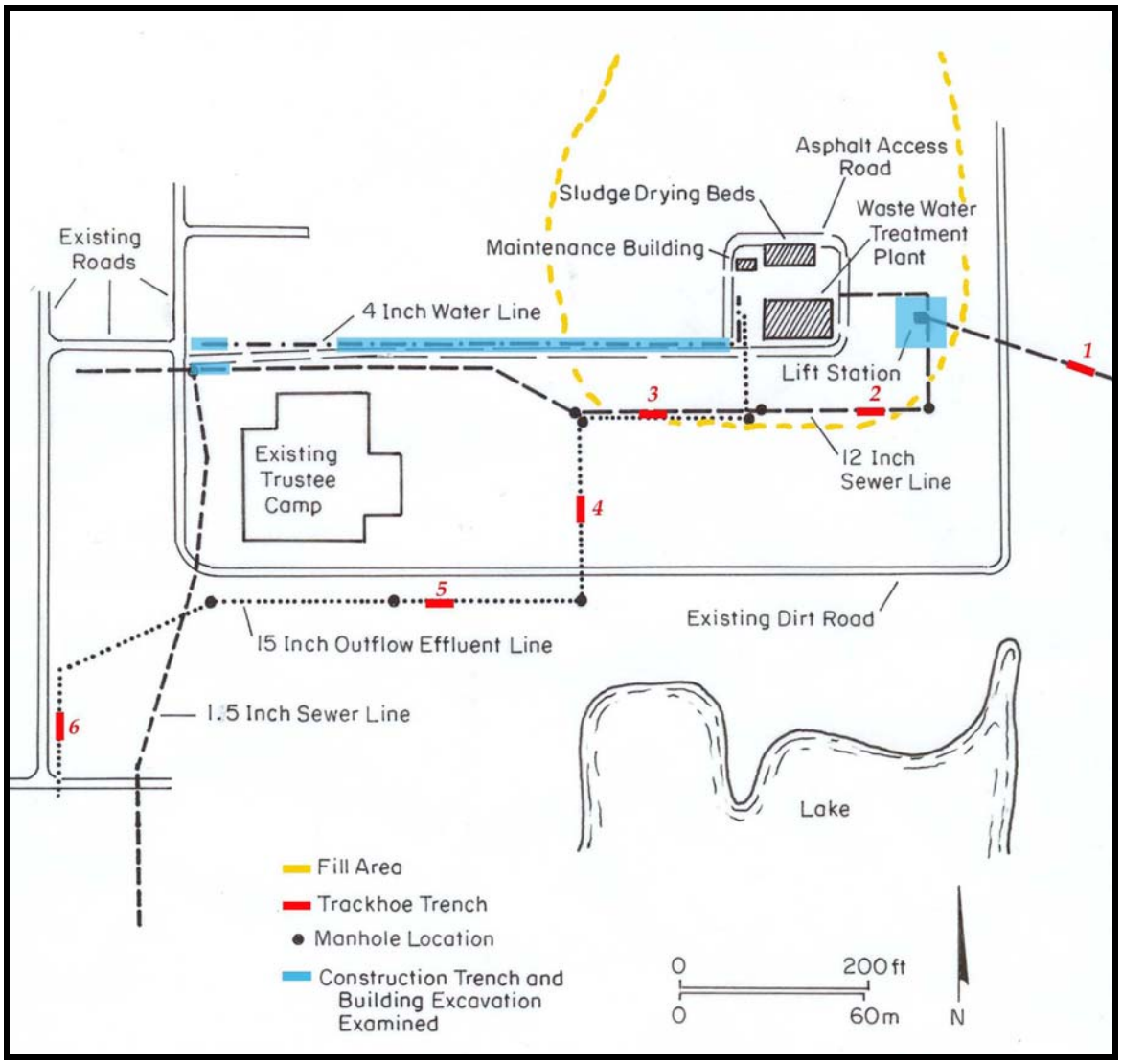

Figure 3. Project Area taken from engineering map

ENVIRONMENTAL SETTING

General

Grimes County is located in the southeastern part of central Texas and is approximately 800 square miles in size. Adjacent counties are Brazos to the west, Madison to the north, Waller to the south, and Walker to the east. The western part of the county drains into the Navasota and Brazos rivers, while the Trinity River and Bedias Creek collect water from streams in the northeast corner of the county. The southeastern part of the county drains toward the San Jacinto River. Most areas in Grimes County are gently sloping to sloping, but some are nearly level, and other areas are moderately steep and steep. Elevations in the county range from 180 feet along the Brazos River to 460 feet northeast of the community of Singleton. The above information was taken from the *Soil Survey of Grimes County, Texas* (Greenwade 1996) and the *Texas Almanac* (Kingston and Harris 1983).

Soil Descriptions

According to the Soil Legend in the *Soil Survey of Grimes County, Texas* (Greenwade 1996), the soils in the county were formed mostly under post oak trees or grasses. Those soils that formed under post oak trees are mostly light colored, fine sandy loam and loamy fine sand. Those that formed under grasses are mostly dark fine sandy loam, clay loam, and clay. These soils are subject to water erosion.

The project area is located in either the Mabank-Wilson-Burleson unit (dominantly clayey and loamy soils on uplands and terraces) or the Brazoria-Norwood unit (clayey and loamy soils on flood plains) (Greenwade 1996:Sheet 39). The majority of the project area is located within one soil type, Brazoria clay, depressional (Bp). Minor types include Chazos loamy fine sand, 1 to 5 percent slopes (ChC), Crockett fine sandy loam (CrC), Norwood silt loam (NoA), Robco loamy fine sand (RoC), and Wilson clay loam, 0 to 1 percent slopes (WIA).

Brazoria clay, depressional is a very deep, nearly level soil found along the flood plain of the Brazos River (Greenwade 1996:29). Typically, the surface layer is dark brown clay about 20 inches thick. The subsoil, from a depth of 20 to 40 inches, is dark reddish-brown clay. The underlying material, from a depth of 40 to 65 inches, is reddish-brown clay. The soil is moderately alkaline and calcareous throughout. This soil is somewhat poorly drained. It is ponded for prolonged periods during rainy seasons. Permeability is very slow, and the available water capacity is high. Water infiltrates the soil rapidly when it is dry and has cracks, but infiltrates it very slowly when it is wet and does not have cracks. No information for clays below 65 inches is given in the soil survey.

ARCHAEOLOGICAL BACKGROUND

According to Biesaart et al. (1985), Grimes County is located within the Southeast Texas cultural-geographical region, and it is part of the Southeast Texas Archeological Study Region as defined by Kenmotsu and Perttula (1993). In 1985, this region contained 1630 sites (8.06% of the region) and was ranked 5th in the state. Grimes County was also 5th in the region with 94 recorded archaeological sites (Biesaart et al. 1985). At the time of this survey, 414 prehistoric and historic sites had been recorded in the county (TARL files). The vast majority of sites in the county were located and recorded by archaeologists from Texas A&M University and the private contract firm Espey, Huston & Associates, Inc. on property belonging to the Texas Municipal Power Agency (TMPA) between 1975 and the closing of the mine in the 1990s. These studies involved intensive survey, testing, and mitigation. Prehistoric sites present ranged in age from Paleoindian times through the Late Prehistoric period of Texas prehistory and were found on a variety of landforms such as small knolls on floodplains, T-1 terraces, and uplands. Historic sites include Anglo-American and African-American farmsteads and house sites, log cabins, and two 19th century resorts (Piedmont Springs and Kellum Springs) associated with natural sulphur waters believed to contain healing properties.

Although no formal survey involving the project area by a professional archaeologist has been conducted, the contract firm Antiquities Planning & Consulting carried out one study in the vicinity in 1998 (Antiquities Planning & Consulting 1989). Five acres were examined, and one Late Prehistoric site (41GM404) was found on a low sandy hill overlooking the first terrace of Sandy Creek about 1 km northwest of the confluence of this stream and Grassy Creek, two of the major tributaries in the Brazos River flood plain. No cultural features were observed. Artifacts noted include flakes, a ceramic body sherd, and a hammer stone. The researchers estimated that site had been disturbed through plowing and, 50% of the site has been removed through borrowing of sand. The depth of the cultural deposits was found to be 40 based on shovel tests. No further investigations were recommended, as the proposed borrow pit will not affect this site.

Site 41GM404 is typical of Late Prehistoric sites in the general area, being located on a sandy knoll or terrace adjacent to a stream. This area probably served as campsites where stone tool refurbishing was a major activity. Little can be said about the daily activities except it is reasonable to assume that houses were probably present and the economy was based on hunting and gathering. Pottery was made from local clays, and the completed vessels were probably used for storage of food and/or water. Stone tools used for hunting and other domestic tasks were fashioned from cobbles often found in gravel deposits along the larger streams. That this site has been disturbed through quarrying for sand is not unusual. The author has observed numerous prehistoric sites in Grimes and nearby counties that have been greatly affected by quarrying. Another common form of disturbance is related to plowing associated with agricultural activities in the early part of the century. In a few cases, sites have been disturbed by collectors searching for artifacts to add to personal collections.

A detailed discussion of previous work in the county is not necessary for a negative report. However, mention of relevant reports is made here, and the interested reader is referred to the statistical overview by Biesaart et al. (1985), *Archeology in the Eastern Planning Region, Texas: A Planning Document* (Kenmotsu and Perttula 1993) published by the THC and several contract reports documenting work at TMPA such as Bond (1977, 1981), Brown et al. (1987), Davis (1981), Glander et al. (1986), and Rogers et al. (1990).

METHODS

Prior to entering the field, a search of the TARL records was conducted to identify any previously recorded archaeological sites in or near the project area. The forms for those sites relevant to this project were examined, and certain contract reports were reviewed. The proposed methods were discussed with William A. Martin, Staff Archaeologist at the THC, prior to obtaining an Antiquities Permit from that agency. The methods to be employed for this project are dictated by the *Minimum Survey Standards for Project Areas of 200 Acres or Less* as published by the THC. Since construction had already begun, the Principal Investigator referred to the THC for guidance. The decision was made to monitor ongoing construction and examine all exposed profiles dug by the heavy equipment on site. Shovel testing of the dense clays was not considered practical. Not all of the water and sewer line will be installed quickly. Therefore, when possible, these areas were examined through trenches excavated by a trackhoe.

Wastewater Treatment Plant

Construction of the wastewater treatment plant will be restricted to the fill material above the natural ground surface. Therefore, the survey crew did not examine this site.

Lift Station

At the time of this investigation, construction of the lift station was in progress (Figure 4), and the location of the station was on the edge of the fill. The survey crew examined the disturbed earth for evidence of buried cultural materials within the exposed profiles and displaced cultural materials in the disturbed soil adjacent to the site of the proposed facility. Because of the previous extensive disturbance, trackhoe trenching was not necessary to view wall profiles. The area was documented through field notes and digital photography. No attempt was made to screen the dense clays that form the surface and subsurface soils in this area.

Figure 4. Construction of Lift Station

Water and Sewer Lines

Excavation of the trenches for the four-inch water line was underway when the field survey crew arrived on site. Surface exposure was excellent; therefore, this area was visually inspected for the presence of buried cultural materials. Those areas along the route of the water and sewer lines where construction had not taken place were examined with a trackhoe, and all trenches were excavated to the depth of the proposed construction. Profiles were drawn in the field. In all, six trenches were excavated with the trackhoe. Each trench was 10 meters long and 4 meters deep. The location of the six trenches is depicted in Figure 3, and soil profiles of each trench appear as Appendix I. The area was documented through field notes and digital photography. No attempt was made to screen the dense clays that form the surface and subsurface soils in this area. Figure 5 illustrates construction of the 4-inch water line.

Figure 5. Construction of the 4-Inch Water Line

RESULTS AND CONCLUSIONS

According to the records check at TARL, no archaeological sites have been recorded within the boundaries of the current project area, and there is no indication that a professional archaeologist has investigated the area. Only one previously recorded site (41GM404) is plotted on the TARL maps within ½ kilometer of the project area (see *Archaeological Background* above). It is known from previous work by archaeologist Bradley F. Bowman that buried sites are present in the clay soils that form the Brazos River flood plain in portions of Brazos County. There is no record of this site type on the river in Grimes County.

The survey and monitoring activities did not locate any buried sites in the current project area, and no terraces or knolls with sandy soils were observed in the flat flood plain. BVRA hypothesizes that this area was not selected by prehistoric groups for a campsite or other form of utilization because of the lack of sandy topsoil and distance from water, or the clay soils below the surface pre-date human occupation in this part of Texas.

RECOMMENDATIONS

No archaeological sites were found within the project area. Therefore, it is recommended that construction be allowed to proceed as planned. Should cultural materials be encountered during construction work must cease until the THC and BVRA evaluate the area of the find in consultation with the TDCJ.

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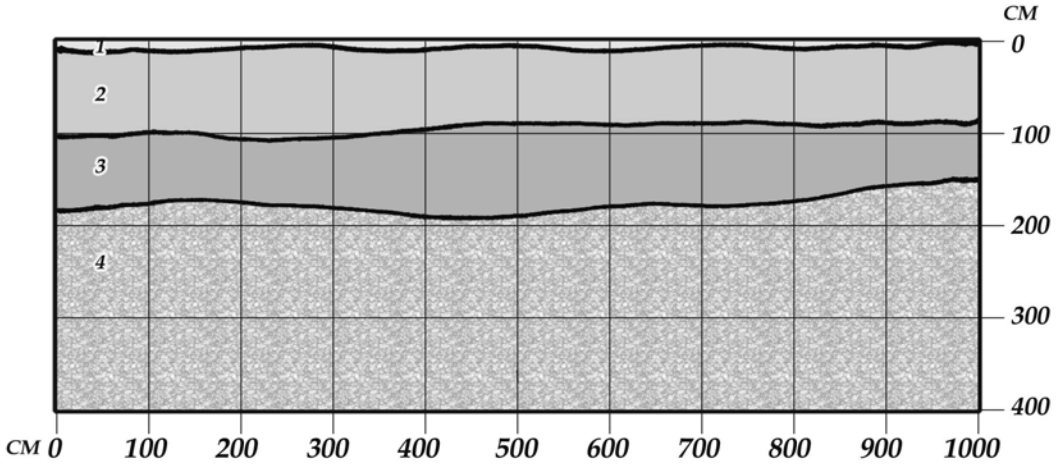
APPENDIX I

TRACKHOE TRENCH PROFILES

TRACKHOE TRENCH 1
SOUTH WALL PROFILE



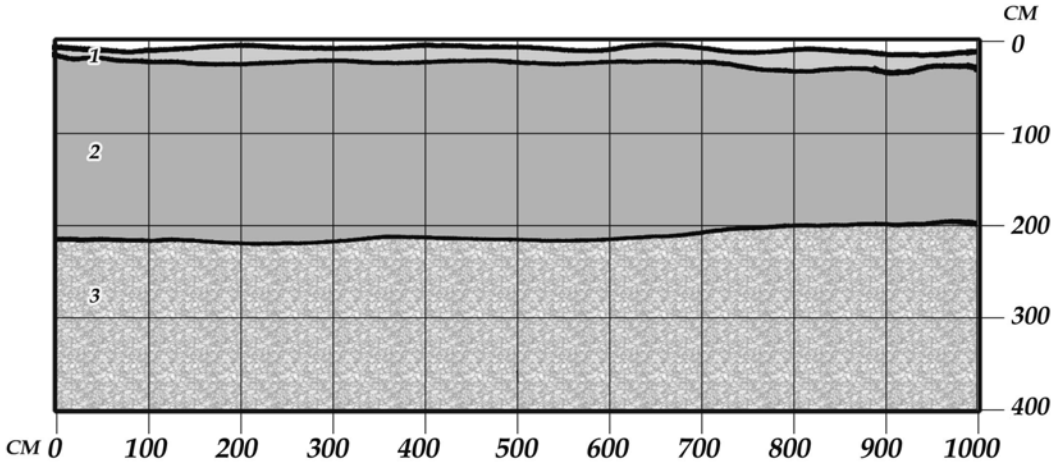
Zone 1: Light brown clay loam, 10YR4/3.

Zone 2: Dark brown clay, 5YR2.5.

Zone 3: Brazoria clay, reddish-brown, 5YR5/8.

Zone 4: Brazoria clay, reddish brown,unexcavated.

TRACKHOE TRENCH 2
SOUTH WALL PROFILE

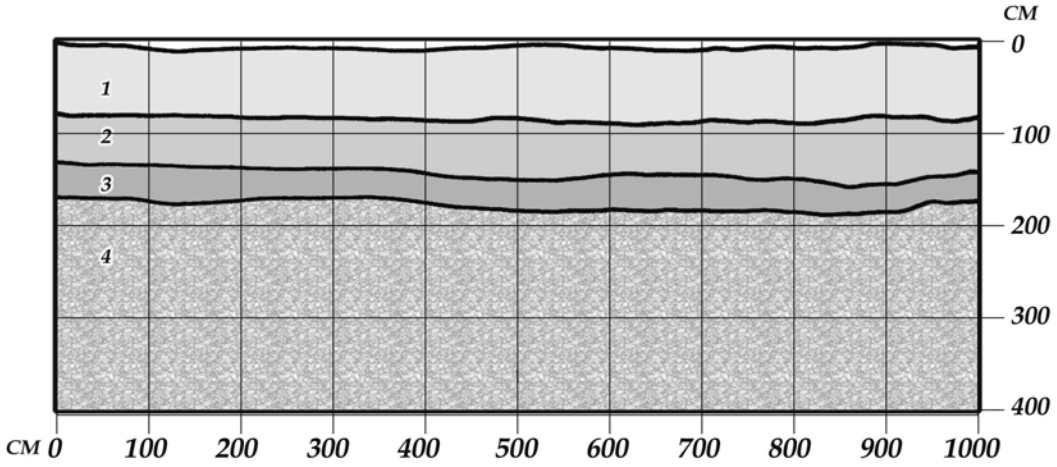


Zone 1: Mixed clay fill from lake excavation.

Zone 2: Dark brown clay 5YR2.5.

Zone 3: Unexcavated.

TRACKHOE TRENCH 3
SOUTH WALL PROFILE



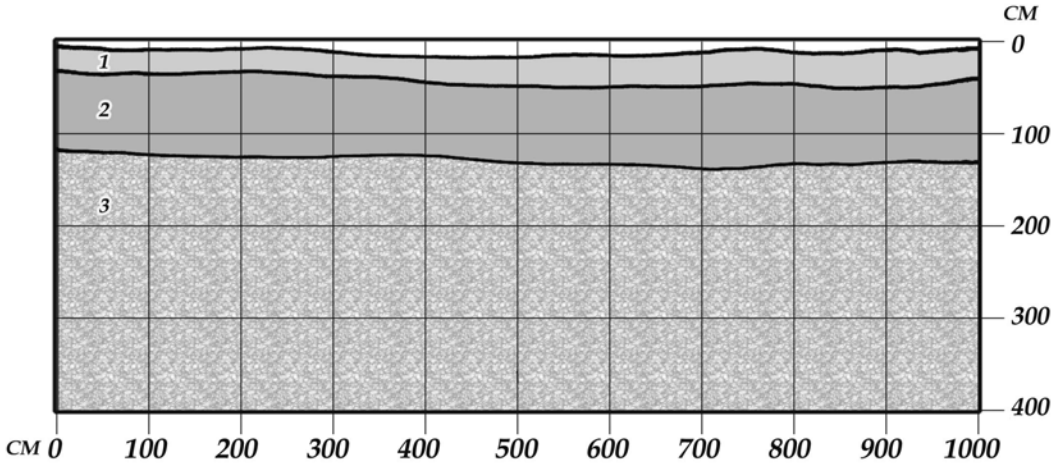
Zone 1: Mixed clay fill from lake excavation.

Zone 2: Buried A horizon. Light brown clay loam, 10YR4/3.

Zone 3: Dark brown clay, 5YR2.5.

Zone 4: Unexcavated.

TRACKHOE TRENCH 4
EAST WALL PROFILE

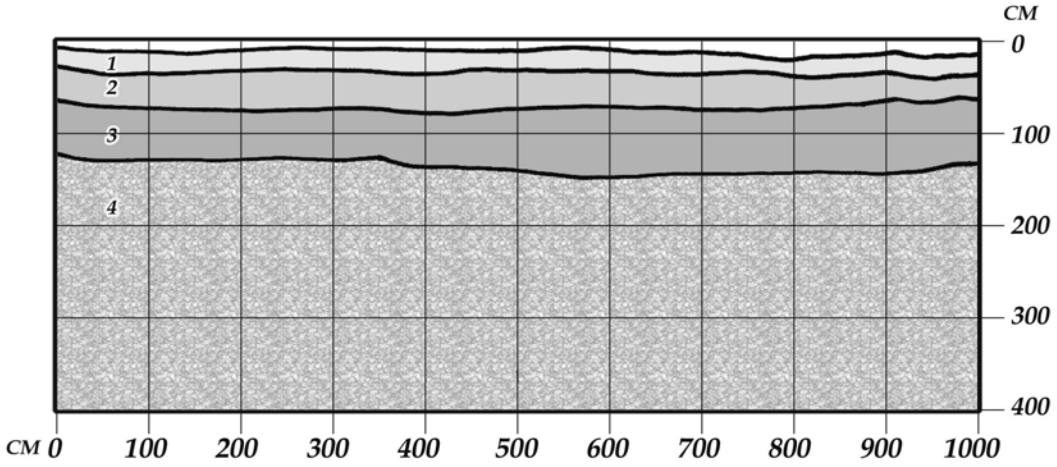


Zone 1: Light brown sandy clay loam, 10YR4/3..

Zone 2: Dark brown clay, 5YR2.5.

Zone 3: Unexcavated

TRACKHOE TRENCH 5
SOUTH WALL PROFILE



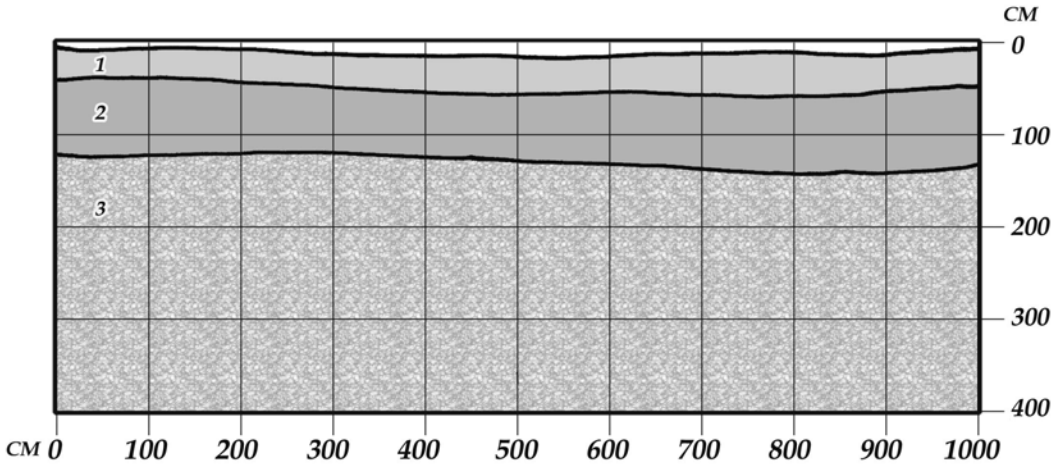
Zone 1: Light brown sandy clay loam, 10YR4/3.

Zone 2: Dark brown clay, 5YR2.5.

Zone 3: Brazoria clay, reddish-brown, 5YR5/8.

Zone 4: Unexcavated.

TRACKHOE TRENCH 6
EAST WALL PROFILE



Zone 1: Dark brown clay, 5YR2.5.

Zone 2: Brazoria clay, reddish-brown, 5YR5/8.

Zone 3: Unexcavated.